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# The behavioural desk research in urban space analysis as a policy tool: the case of Instagram

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## Abstract

The dissemination of social media and the growing resources of big data create both new opportunities for urban space analysis and new challenges for contemporary policy making. Among the sources useful from this standpoint there are, inter alia, photos posted on Instagram. They can easily become the basis for behavioural analysis of the quality of urban life based on complete sampling and conducted in the method of desk research. The article uses photographs published on Instagram for the purpose of exploratory analysis of land use on the examples of five parks located in New York. This makes it possible to determine the nature and ways of perception of selected spaces.

**Keywords:** social media, big data, qualitative research, method, New York

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## Behawioralna analiza danych zastanych w badaniu przestrzeni zurbanizowanej jako narzędzie polityki publicznej: przypadek Instagrama

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### Streszczenie

Upowszechnienie mediów społecznościowych i rosnące zasoby danych typu *big data* tworzą zarówno nowe możliwości dla analiz przestrzeni zurbanizowanej, jak i wyzwania dla współczesnego procesu stanowienia polityki publicznej. Wśród źródeł użytecznych z tego punktu widzenia są między innymi zdjęcia publikowane na Instagramie. Mogą one łatwo się stać przedmiotem behawioralnej analizy jakości życia w przestrzeni miejskiej na podstawie próby złożonej z całej populacji i być wykonywane w formule *desk research*. Artykuł używa fotografii publikowanych na Instagramie w celu analizy eksploracyjnej użytkowania przestrzeni na przykładzie pięciu parków zlokalizowanych w Nowym Jorku. Umożliwia to określenie charakteru i sposobów postrzegania wybranych przestrzeni.

**Słowa kluczowe:** media społecznościowe, big data, badania jakościowe, metoda, Nowy Jork

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Urban space is a deeply complex creation and its studies require the usage of multifaceted analytical tools. Although rural areas are less complicated examples of inhabited spaces than urban counterparts, even their spatial analyses are prone to the risk of deep reductionism. Different types of landscape evaluation condition research tend to overlook contexts other than the visual quality of space (Appleton, 1975; Moss and Nickling, 1980). In turn, analyses of the social environment that are typical for social sciences face even greater constraints. The space of human existence should not be understood as something that has narrow boundaries specific for laboratory conditions. The social production of such space is a process that is constantly undergoing changes.

The important problem of sampling in urban research concerns questionnaire surveys as well as field studies, which need to serve spatial behaviour observations. It seems that the use of big data analyses may be a way of counteracting such restrictions (Mayer-Schönberger, Cukier, 2013). Nevertheless, the collection of an unlimited amount of data on the behaviour of citizens is subject to significant criticism. For example, authoritarian governments have already collected a large amount of data about their citizens, which creates the risk of total disenfranchisement. Furthermore, the knowledge of consumer behaviour increases the ruthless effectiveness of large corporations and the imbalance of their bargaining power towards their clients and smaller competitors (Drozda, 2017). Contemporary austerity policies together with technological backwardness of public institutions pose a threat that the often-praised smart city concept may become an additional tool of oppression rather than a stimulus of egalitarian development because, as it has been noted by Harvey (2010: 96), “capital frequently uses new technologies as weapons in class struggle”. According to Vanolo (2014: 894), the idea of “smartness is becoming a field of social control that makes intrusion in a person’s private life quite natural”. The mere subordination of civilization to digital technologies prompts criticism, too. In the urban space it is manifested, for example, in the dependence on smartphones, which affects social relations, and in the ways in which dwellers use urban amenities.

On the other hand, big data seem to be an extremely promising resource available for the world of science and policy makers. Among the latter group there are urban planners and other people involved in the urban policy making process. The main advantage of using big data in this area is the possibility of conducting research on complete samples. These data can be collected much more often than censuses are taken, which usually occurs only once a decade. Furthermore, the acquisition of samples taken from contemporary big data sources seems to be cheap. Moreover, it is possible to acquire data in a very dynamic way (in real time), which was not possible even with the help of some older big data sources such as geographic information systems (Frias-Martinez et al., 2012). According to the division proposed by Marans

and Stimson (2011), three main groups of indicators for assessing the quality of urban life can be distinguished. These are the so-called (1) objective, (2) subjective, and (3) behavioural indicators. In particular, the last group of indicators may be developed based on complete sampling. Another extremely attractive feature of the research conducted with big data is that they can be performed in the form of desk research. Previously, behavioural analysis of land use was associated only with field research and smaller samples (Whyte, 2001; Gehl and Svarre, 2013).

The objective of this article, therefore, is to not only present the proposed methodology of visual analysis of data obtained thanks to Internet monitoring based on photos posted by Instagram users and then collected by using the automatic Internet monitoring tool called Brand24. Its aim is also to describe some significant dilemmas for policy-making processes that are grounded in the problem of collecting data from various social networks. As Latour (1996: 210) has already noted, “technology is sociology extended by other means”. This is precisely why each innovation consists of two elements: technical achievement implementing and its social spreading. From the standpoint of practical policy making, this aspect is also illustrated in the example of the methodology used in this study. Even though social media content analysis is constantly developing, some privacy rules of such websites were strengthened after the Facebook-Cambridge Analytica scandal when the big data extraction through web ‘scraping’ on a massive scale was revealed (Kostkova, 2018; Ombler, 2018). It resulted in, for example, a ban on the analytical device used in this study introduced by Facebook, which is the owner of Instagram as well. *Ipso facto*, the imbalance of power between the relatively small Polish tech company and the global internet tycoon became visible to the naked eye, regardless of whether the decision to deny Brand24 its access to data was right or not. Reflections on such a policy tool as the behavioural desk research in urban space analysis should, therefore, take into account both technical and social rooting of the problem presented here.

The nature of this research is also exploratory data analysis, and because of that its purpose is not to obtain a fully representative sample, but rather to present the theoretical framework for further and more complex analyses. In addition to discussing the theoretical assumptions of the proposed research methodology, the results of the space perception analysis will also be presented on the example of a group of selected parks in Manhattan, New York City. The analysis of visual sources will allow analysing the way that space is perceived by users of these green infrastructure devices. Apart from that, the article uses source literature in the fields of quality of urban life research, big data analyses, and landscape evaluation. An extended version of the research description was also presented in the monograph already published in Polish (Drozda, 2019).

## Social media and the policy making

The dissemination of the Internet and innovative forms of public engagement have created new challenges for contemporary urban governance. According to Hendriks (2012: 442), “governments are increasingly placing services online and encouraging citizens to provide feedback. Social media technologies such as Twitter and Facebook have opened up communication channels (though mostly one-way) for agencies to communicate with their constituents”. By the same token, one can observe that social networks can become useful not only as a means of communication between the authorities and citizens, but also a source of data, not only for citizens mostly focused on searching for very different kinds of public information. The same exchange can work in the opposite direction, which brings various moral dilemmas into the problem of public administration data processing. Are the authorities allowed to use the content that is already published in the social media or is the only acceptable possibility to collect some information from primary sources using digital technologies? It seems that especially after the Facebook-Cambridge Analytica data scandal such questions are not abstract but located quite close to the core of practical challenges of not only political campaigns, but also public policy making and urban governance. The possible answer for such a challenge is probably the responsive governance – a model of public management that is evaluated not only on the criterion of effectiveness but also on civic control of actions taken by the authorities. It seems that such a way of governance could be improved thanks to the various digital communication technologies (Bekkers, Edwards, 2013; Goldsmith, Crawford, 2014; Hyle, 2016).

This aspect locates the reflection on urban research techniques not only in the field of classical urban studies but among policy studies as well. Martin (2001), for example, indicates that relations between these fields are nowadays too weak. What is more, various branches of urban studies are deeply rooted in politics and strictly connected with phenomena specific to public policy. According to Martin, “theory that is isolated from the practical needs and lessons of policy is itself very unlikely to provide a useful basis for the design of policy interventions. Similarly, policies that are not underpinned by empirically supported theoretical foundations are unlikely to prove especially effective. Indeed, precisely because they involve the close interplay of theory, evidence, interpretation and evaluation, policy studies succeed most where they are multidimensional and multi-perspectival” (Martin, 2001: 199).

It seems that social media content analysis can be useful for a huge variety of public administration entities and practitioners, including both high-level policy planners

and street-level bureaucracy representatives (Lipsky, 2010). Policy studies are focused on different aspects of the policy making process, including not only the analysis of intended goals and practically obtained results of implemented policies, but also its stakeholders or the used instruments and tools. As it seems, some reflections on social media content can also be used against this backdrop as a potential resource for policy making, including its practical usage, especially since, according to some authors, “technological change has largely been neglected by public administration” (Andrews, 2019: 296). However, it is not possible to escape from such a challenge in the reality when the “social media are used now, and likely, in the future, to mediate public understanding of important events, trends, and decisions” (Auer, 2011: 730). The proposed method of behavioural desk research in urban space analysis based on Instagram is a very precise example of such a phenomenon.

## Related work

An overview of content published in various types of media has long been a subject of interest for the representatives of the world of social sciences as well as commercial marketers. In both contexts, media monitoring, which can be understood as the activity of checking the output of different kinds of media, is embedded. Both traditional discourse analyses and marketing research use various tools with a limited degree of automation, like analysing press articles (the so-called clipping) or calculating the number of citations or mentions about the brand or product. The emergence of the Internet and the development of related analytical tools have made it possible to refine more and more advanced technological solutions. The media monitoring techniques currently used allow one to conduct real-time analyzes, which distinguishes them from old techniques that have a retroactive character. Contemporary tools for such monitoring enable reacting in crisis situations or taking advantage of occasional opportunities, as is the case with the so-called real-time marketing.

Thanks to the commercial potential of media monitoring, there is already a significant number of such solutions. The simplest open-source tools such as Google Trends show only general interest in specific concepts and phenomena by analyzing the amount of network traffic associated with them. More advanced solutions offer much more data. They allow one not only to capture information from all the publications referring to the topic of interest with great precision, but also to study the sentiment (Pang, Lee, 2008) or the number of interactions that a given action calls on the network community. Data can be also obtained with the help of different authorial scripts prepared by individual researchers, like it was used in the case of, for example,

studies on the range and the course of epidemiological phenomena conducted by Paul and Dredze (2011) and Malesińska (2016), in the research on different types of land use by Frias-Martinezs (2014), or in the article on interactions between human and nature carried out by Roberts et al. (2018). The advantage of using ready-made tools is their simplicity and low cost, while the disadvantage is that more complex solutions are not available for free.

Although the possibility of obtaining complete sampling in research that use Internet monitoring is very welcome, there are actually some limitations in this respect. Not everyone is connected to the network, and the digital divide still exists. Nevertheless, not only does the number of digital natives increase, but also the digital divide in older age groups tends to decrease. Elderly web influencers have been active for many years, for example the British vlogger called Geriatric1927 (died in 2014). At one time he was the most-subscribed author on YouTube, even though the Internet is still mostly associated with younger generations (Sørenssen, 2009; Small, Vorgan, 2011). The digital divide is also becoming less noticeable in plenty of developing states. Surprisingly, in many such cases the development of digital infrastructure is far ahead of the backwardness in the area of basic municipal services. Wireless Internet access and smartphones are much more widely available there than decent roads or basic sanitary services (James, 2012; Pearce, 2013; Asongu, Odhiambo, 2017). In Poland, for example, even in the group of the poorest households (the fifth quintile) the number of those equipped with smartphones exceeded 70% in 2018 (Statistics Poland, 2019).

Any type of research, including those that use Internet monitoring, can be divided into qualitative and quantitative types. In particular, the second orientation seems to be more useful in studies which are related to the aforementioned possibility of obtaining complete sampling. Both types enable the researcher to conduct analysis connected with text and visual sources of data. The analysis of textual content seems relatively simpler. Checking the content of articles posted on the web, tweets, blog entries or posts in various social networks is very similar to clipping of printed content. Advanced analysis allows one to enrich such data with information about the time and place of publication or related hashtags. It is particularly convenient to research content from Twitter thanks to the 280-character limit for each tweet.

Conducting analyses of visual content seems to be more difficult due to their greater complexity, which places them along with qualitative research. However, in contrast to more complete textual content, questionnaires or interviews, visual data also facilitate the analysis of aspects people are less aware of or express less openly, including the subconscious perception of space. Scientific visual research techniques that use both primary and secondary sources have been known for a long time. They include the analysis of, for example, different digital mappings (photos and videos),



artistic works (paintings or sketches) or various types of mental maps described by the authors like Appleyard (1970), Gould and White (2002), Pauwels (2010), or Sztompka (2015). Nevertheless, dissemination of social media creates new opportunities in such research. Even if photographs published on Instagram are not completely unified, they seem to be a useful tool for exploring ways of using urban space (Boy, Uitermark, 2016; Schwartz, Hochman, 2014; Zappavigna, 2016). This software allows for easy publishing, sharing and editing different kinds of photos and videos on smartphones. Although with the development of the software the number of functions available within the application is gradually increasing, the range of possible ways of editing photos remains limited. Moreover, as Hochman and Manovich (2013) showed on the example of users from places as diverse as North America, Europe, the Middle East and East Asia, Instagram users usually use very similar options. For example, they choose identical photographic filters from the whole set offered as part of the application tools. Such similarities in combination with the huge number of photographs published in this way on the Internet encourage using this data source for urban analysis. Even though it may be useful to check various aspects of published photographs and related statistical data, the proposed authorial method used in this article highlights the qualitative analysis of the content collected in this way.

## Methodology

The presented research method assumes that the analysis both of elements that are present in the photo and of what is missing from it seems particularly valuable. Photographing specific locations shows the popularity and negative reception of selected places (Fischer, 2010). The positive reception of the space is demonstrated by the presentation of vast frames of space, designed urban details, and the graphical projections of space or photos of people, which allow one to associate the photographed spatial contexts with specific places. This is not achieved by the so-called selfies, which are self-portraits made with smartphones. They do not show any elements of the surroundings, and thus may be taken in any place. The same is true of photographs of details that are not parts of the planned spatial design, which can document its aesthetic and functional weaknesses. Regardless of the context, there are also photos of animals that are different kinds of photographic topics. Their presence can, however, illustrate certain features of space as the degree of freedom of using it. For example, the absence of dogs in the photos presumably shows such restrictions as a ban on pets, which can also be associated with other constraints and forbidden behaviours (see Table 1).



To summarise, it seems that there are two main types of images and ways of spatial perception represented by them (see Table 2).

**Table 1. Examples of types of photos published in social media (the Polińskiego Park, Warsaw in 2019)**



General view of space



Urban detail



People in a specific context



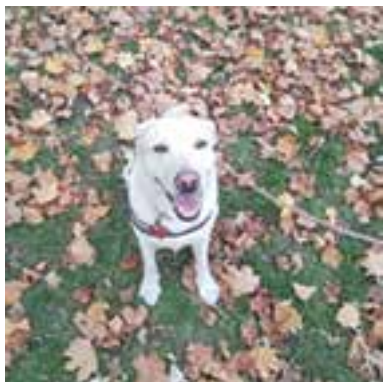
Graphic representation



Non-urban detail



People in an unspecified context (selfie)



Animals



Others (a random photo with accidental geolocation)

Source: own work.

The first illustrates the positive perception while the second displays the lack thereof. The positive perception means that the presented space is the main subject of the photo and the user intentionally shows the spatial context. Its reverse is based on the lack of such an intention and includes not only negative reactions, but also neutral attitude or a lack of interest in the specific place. For example, pictures of animals are independent from spatial context even though they are usually perceived as an important element of healthy spaces in over-urbanised contexts. They are an independent subject of photos and can be photographed also in degraded spaces. The distinction proposed in this study refers to a certain extent to the non-places theory of Augé (1995). However, the proposed division also assumes that some spaces that are superficially perceived as transit or just non-attractive can be quite well domesticated by their users as well (Boy, Uitermark, 2016). It is also worth remembering that some of the photos may present several types of the typology outlined here at the same time. Therefore, the values may not add up to 100 percent.

**Table 2. Photos published in social media and the perception of space**

Photo type	Is the positive perception of space present here?
General view of space	Yes
Urban detail	
People in a specific context	
Graphic representation	
Non-urban detail	No
People in an unspecified context	
Animals	
Others	

Source: Drozda, 2019.

Internet monitoring research can check both the way of valuing individual places and their popularity in a comparative approach. The purpose of this article is to investigate how the specific spaces are used, but not how popular they are in comparison to other places. From this point of view, the proposed solution is much better in the case of more frequently used places. However, this also does not exclude the possibility of analysing even less intensely used spatial contexts.

## New York City parks: case study

### Spatial context

The subject of the empirical part of this study is focused on five parks located in relatively similar spatial contexts, even though there are also significant differences between them. The studied parks are: Bryant Park, Central Park, the High Line Park, Tompkins Square Park, and Zuccotti Park. All five are located in Manhattan, New York City. These spaces differ mainly in terms of shape and acreage. Three of them (the Bryant, the Tompkins, and the Zuccotti) are relatively small green squares that do not disrupt the grid structure of Manhattan with its regular intersections. Central Park is relatively well-connected with the street network, but at the same time it is a breach in this structure, and it is the surrounding that is adapted to the shape of the park, and not vice versa. The High Line is located on the viaduct of the former railway line. The 'swinging' structure of the park is completely independent of the urban structure and interweave various blocks of grid. The acreage of parks is very different as well. The last two can be considered as similar in terms of scope. However, the first one is only a narrow thread formed on the former viaduct with a width of no more than a dozen or so meters. On the other hand, the Central is a very large quarter of the city, totaling 341 hectares. Other parks are smaller, the smallest being the Zuccotti, with an area of only one third of a hectare.

The second important difference is the ownership status. Two of the parks (the Central and the Tompkins) are maintained by local authorities and may be used quite freely. For example, it is possible to visit them with pets. The other parks vary in ownership status, but all three are examples of the privately owned public spaces (POPS) (Kayden, 2000). According to Polyák (2017), they are examples of semi-private public spaces that "represent a hybrid space, created by real estate developers in exchange for height and surface bonuses. This exchange is made possible by zoning codes that are designed to offer incentives to developers in order to contribute to municipal facilities, services and spaces".

Nowadays commercialization of POPS is advanced to varying degrees. Sometimes they are spaces that are fully privately owned, and sometimes they are only managed by non-public entities for some time. Such parks often benefit from the support of numerous private donors, including the institutions of the so-called FIRE sector (finances, insurances, and real estate companies) that is extremely influential in New York (Fitch, 1993). POPS were backed especially by the previous mayor of the city, Michael Bloomberg, who supported them due to their 'leveraging' effect. Some POPS made it possible to improve the image of some areas of the city significantly and increase the value of the adjacent properties, which is particularly evident on the example of the High Line. On the other hand, the 'leveraging' strategy also raised critical assessments of such places due to their potential to trigger or strengthen gentrification processes (Drozda, 2018).

On this occasion, it should be noted that the High Line has a special status among all the examples indicated. It was created thanks to an initiative of the grassroots social movement. Although the project eventually gained the support of local authorities and commercial entities, the park was the result of actions of urban activists, who are still participating in its management (David, 2002; David and Hammond, 2011; Millington, 2015). In contrast to the often neglected public parks, POPS are considered more aesthetic, but at the same time allowing for less free use. A representative example of these restrictions is the possibility of bringing pets to such places. The public-managed Tompkins is, therefore, dominated by dog owners, whereas dogs are not allowed to the High Line at all. The privately-owned Zuccotti was also used by protesters during Occupy Wall Street and acted as the main encampment for activists involved into this movement. They were all evicted from this space, which became an explicit expression of its real market-oriented character. However, even the public-owned Tompkins underwent similar processes during the period of urban riots that happened here at the turn of the 1980s (Vasudevan, 2017). All the contrasts and resemblances mentioned above enable juxtaposing chosen case studies to elucidate differences and to draw conclusions from content expressed in photos published by Instagram users.

## Content analysis and its results

The analysis of the subject was based on the photos taken in June 2017. This period is conducive to the free use of public space. This is facilitated mostly by summer weather conditions and the period's lack of special days such as bank holidays. Both of these factors can potentially affect the frequency of land use (Gehl, Svarre, 2013). With the help of Brand24, 6,294 photos of the Bryant, 34,130 of the Central, 3,263

of the High Line, 143 of the Tompkins, as well as 50 of the Zuccotti were collected.<sup>2</sup> The pictures used in this exemplary study are not presented here due to ethical obligations and privacy rights.

In relation to the High Line, the Bryant, and the Central, a group of 100 mentions for each of these parks was drawn. In the case of the Zuccotti and Tompkins, all entries meeting the criterion of relating to the studied spaces were analyzed. However, their numbers were less than 100 (even in the case of the Tompkins) due to the above-average activity of some Instagram users. Because of this, some of the photographs were excluded from the further analysis.<sup>3</sup> The results of a detailed, qualitative web content analysis therefore included a total of 425 photographs selected in this way. The results of such analysis are presented below (see Table 3).

**Table 3. Perception of space based on mentions on Instagram: analysis of parks in New York (June 2016)**

	High Line	Bryant	Zuccotti	Tompkins Square	Central
Elements illustrating the positive perception of space (%)					
General view of space	48	40	41	13	37
Urban detail	16	5	24	10	4
People in a specific context	28	39	29	24	28
Graphical representation	1	0	0	2	1
Elements not connected with the positive perception of space (%)					
Non-urban detail	4	11	9	10	0
People in an unspecified context	1	6	3	9	5
Animals	0	0	0	16	8
Others	7	5	6	22	20
Illustration of space (total)	89	82	85	48	68

Source: Drozda, 2019.

The analysis of photographs posted on Instagram indicates that the described green spaces in Manhattan are evaluated and used in very different ways. In terms of the number of illustrations that present the positive perception of space, the three POPS are valued significantly better than fully-public counterparts. The High Line

<sup>2</sup> Photographs selected on the basis of the analysis of hashtags and geolocations did not include all mentions of the indicated spaces. This is due to the necessity of using automatic filtering settings. Thanks to this, information related to automotive and sports is also collected. For example, the 'high line' expression may refer to the properties of the car engine. Similar problems were brought by the name of the Central Park, which was found also in many other places in the world.

<sup>3</sup> This type of arbitrary decision obviously has a negative impact on the representativeness of the adopted sample, but it is less important in the case of exploratory data analysis.

as an urban object aroused interest most often, with 9 out of 10 published photos there presenting the design of this park. Nevertheless, its advantage over Bryant and Zuccotti Parks is quite small in this case. Moreover, the comparison with the commercially designed Zuccotti Park shows that even numerous urban details that diversify the space of the linear park do not arouse greater interest.

In terms of the number of photographs that present people as their main subject, there are no major differences between all five parks, including those in public management. However, their design seems to be less appreciated. For more than half of the Tompkins photographs, the local spatial context was at most a side subject of photography. Pictures of public parks, in turn, show a freer way of the land use, for example a larger representation of animals absent from POPS, even from the ones where the admission of pets is legal.

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The results of the study uphold the view presented by Boy and Uitermark (2016) that the subject of photographs published on Instagram is mainly the most attractive or the most-invested public spaces. The analysis also reflects the ways in which particular places are used, such as the degree of freedom in this or the range of permitted activities. Nevertheless, the results of the analysis do not provide convincing evidence that places designed with the involvement of civil society (as it was in the case of the High Line Park) are more popular among visitors. On the other hand, the analysis of photographs posted on Instagram also allows one to disagree with the non-places theory of Augé (1995). Unattractive spaces do not necessarily have to be transit ones, because they can simply condition other ways of usage as well.

In order to deepen analyses using the Internet monitoring for the needs of urban research, it seems necessary to refine the technical aspects of them. The analysis of hashtags used in this study is to a large extent limiting, and the refinement of locative data could be particularly beneficial. This would allow both to remove incorrectly tagged posts from the sample and to include into it those that were mistakenly excluded. In contrast, a simplified analytical scheme can be useful for urban policy makers, for example planners or authors of strategic programmes of urban regeneration (Ciesiółka, 2018). Such people are able to check practical results of their projects and actions by that means and study human behaviour in relation to big samples without expensive and time-consuming field research. At the stage of developing diagnostic parts, these people do not always have access to advanced technical tools and high budgets allowing the purchase of expensive solutions. In addition, the use of the Internet monitoring facilitates not only urban planning, but also further ex-post evaluation of implemented policy programmes and the daily



management of public space. Such a model seems to be much more responsive than traditional surveillance methods. Its negative side is that its implementation means interfering in the private life of space users. Still, public posts in social media seem to go beyond the sphere of privacy understood in this way (Boyd, 2008). Probably this is the responsive governance that is a desirable means to successfully counteract the danger of too well-informed public administration exceeding the acceptable limits of citizens' privacy.

The usefulness of big data also allows one to see the importance of one more problem, namely the matter of developing public spatial databases. While the cooperation with the private entities is often possible in urban space, the imbalance of power between the public and private actors as well as between various private actors in themselves is equally likely. The lack of public-provided data not only raises the risk of making the public sector dependent on commercial data providers, but also supports the creation of monopolies that may impede the development of their own competitors. This, in turn, can possibly block potential innovations in smart-city-oriented future urban policy (Drozda, 2017). It is also necessary to remember about the risk of the 'technoutopism'. Some technologies can serve the rich only, and the smart city is developed in parallel with the urban crisis that has been diagnosed for decades. It is expressed in the inability to provide even the most elementary public services, such as caring for basic sanitary services. As Davis (2006: 19) describes it, "the cities of the future, rather than being made out of glass and steel as envisioned by earlier generations of urbanists, are instead largely constructed out of crude brick, straw, recycled plastic, cement blocks, and scrap wood. Instead of cities of light soaring toward heaven, much of the twenty-first-century urban world squats in squalor, surrounded by pollution, excrement, and decay". The space with the greatest intensification of urbanisation is the space not only of a democratic community, but also of the largest concentration of economic capital. As it was shown on the example of *Pokémon Go* location-based digital 'urban game' (Colley et al., 2017), monetization can be the subject of not only the real estate speculation, but also entertainment related to the use of inhabited space.

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## Bibliography

- Andrews, L. (2019). Public administration, public leadership and the construction of public value in the age of the algorithm and 'big data'. *Public Administration*, 97(2): 296–310.
- Appleton, J. (1975). Landscape Evaluation: The Theoretical Vacuum. *Transactions of the Institute of British Geographers*, 66: 120–123.
- Appleyard, D. (1970). Styles and Methods of Structuring a City. *Environment and Behavior*, 2(1): 100–117.
- Asongu, S., Odhiambo, N.M. (2017). Mobile Banking Usage, Quality of Growth, Inequality and Poverty in Developing Countries. *AGDI Working Paper WP/17/046*. Online: SSRN: <https://ssrn.com/abstract=3070048> (accessed: 2.11.2019).
- Auer, M.R. (2011). The Policy Sciences of Social Media. *The Policy Studies Journal*, 39(4): 709–736.
- Augé, M. (1995). *Non-Places: Introduction to an Anthropology of Supermodernity*. London: Verso.
- Bekkers, V., Edwards, A. (2013). Social media monitoring: Responsive governance in the shadow of surveillance? *Government Information Quarterly*, 30(4): 335–342.
- Boy, J.D., Uitermark, J. (2016). How to Study the City on Instagram. *PLoS ONE* 11(6): e0158161.
- Boyd, D. (2008). Facebook's Privacy Trainwreck Exposure, Invasion, and Social Convergence. *Convergence: The International Journal of Research into New Media Technologies*, 14(1): 13–20.
- Ciesiółka, P. (2018). Urban Regeneration as a New Trend in the Development Policy in Poland. *Quaestiones Geographicae*, 37(2): 109–123.
- Colley, A., Thebault-Spieker, J., Lin, Y.A., Degraen, D., Fischman, B., Häkklä, J., Kuehl, K., Nisi, V., Nunes, N.J., Wenig, N., Wenig, D., Hecht, B., Schöning, J. (2017). The Geography of Pokémon GO: Beneficial and Problematic Effects on Places and Movement. In: *Proceedings of the 2017 CHI Conference on Human Factors in Computing Systems*: 1179–1192.
- David, J. (2002). *Reclaiming the High Line*. New York: Design Trust for Public Space.
- David, J., Hammond, R. (2011). *High Line. The Inside Story of New York City's Park in the Sky*. New York: Farrar, Straus and Giroux.
- Davis, M. (2006). *Planet of Slums*. London: Verso.
- Drozda, Ł. (2017). Economic or social capital? Uberisation as an exemplification of the rent gap theory on the example of Poland. *Warsaw Forum of Economic Sociology*, 8(2): 75–85.
- Drozda, Ł. (2018). The Gentrification Approach as an Analytical Tool in Assessing the Effects of Participatory Urban Policy. *Urban Development Issues*, 60(1): 15–22.
- Drozda, Ł. (2019). *Urbanistyka oddolna: Koszmar partycypacji a wytwarzanie przestrzeni*. Warszawa: Wydawnictwa Uniwersytetu Warszawskiego.
- Fischer, E. (2010). The Geotaggers' World Atlas. Online: <http://bit.ly/33rlOuf> (accessed: 2.11.2019).
- Fitch, R. (1993). *The Assassination of New York*. London: Verso.
- Frias-Martinez, V., Frias-Martinez E. (2014). Spectral clustering for sensing urban land use using Twitter activity. *Engineering Applications of Artificial Intelligence*, 35: 237–245.

- Frias-Martinez, V., Soto, V., Hohwald, H., Frias-Martinez, E. (2012). Characterizing urban landscapes using geolocated Tweets. In: *International Conference on Social Computing (SocialCom)*. Amsterdam, The Netherlands: 239–248.
- Gehl, J., Svarre, B. (2013). *How to Study Public Life?*. Washington: Island Press.
- Goldsmith S., Crawford S. (2014). *The Responsive City: Engaging Communities Through Data-Smart Governance*. San Fransisco: John Wiley & Sons.
- Gould, P., White, R. (2002). *Mental Maps*. London: Routledge.
- Harvey, D. (2010). *The Enigma of Capital and the Crises of Capitalism*. New York: Oxford University Press.
- Hendriks, C.M. (2012). Policy evaluation and public participation. In: *Routledge Handbook of Public Policy*. E. Araral Jr., S. Fritzen, M. Howlett, M Ramesh, W. Xun (Eds.). Abingdon: Routledge, 434–448.
- Hochman, N., Manovich, L. (2017). Zooming into an Instagram City: Reading the local through social media. *First Monday*. Online: [www.firstmonday.org/ojs/index.php/fm/article/view/4711/3698](http://www.firstmonday.org/ojs/index.php/fm/article/view/4711/3698) (accessed: 2.11.2019).
- Hyle, M.A. (2016). Conceptual Reflection on Responsive Environmental Governance. *International Journal of Public Administration*, 39(8): 610–619.
- James, J. (2012). Institutional and societal innovations in information technology for developing countries. *Information Development*, 28(3): 183–188.
- Kayden, J.S. (2000). *Privately Owned Public Space: The New York City Experience*. New York: John Wiley & Sons.
- Kostkova, P. (2018). Disease surveillance data sharing for public health: the next ethical frontiers. *Life Sciences, Society and Policy* 14(1). Online: [https://bit.ly/2qi4\\_wR9](https://bit.ly/2qi4_wR9) (accessed: 2.11.2019).
- Latour, B. (1996). *Aramis or the Love of Technology*. Cambridge: Harvard University Press.
- Lipsky, M. (2010). *Street-level Bureaucracy: Dilemmas of the Individual in Public Services*. New York: Russel Sage Foundation.
- Malesińska, A. (2016). Twitter jako źródło wiedzy o stanie zdrowia polskiego społeczeństwa – ujęcie infomediologiczne. *Kultura Popularna*, 49(3): 120–135.
- Marans, R. W., Stimson, R.J. (2011). Introduction In: *Investigating Quality of Urban Life. Theory, Methods and Empirical Research*. R.W. Marans, R.J. Stimson (Eds.). Dordrecht: Springer.
- Martin, R. (2001). Geography and public policy: the case of the missing agenda. *Progress in Human Geography*, 25(2): 189–210.
- Mayer-Schönberger, B., Cukier, K. (2013). *Big Data: A Revolution That Will Transform How We Live, Work, and Think*. New York: Eamon Dolan/Houghton Mifflin Harcourt.
- Millington, N. (2015). From urban scar to ‘park in the sky’: terrain vague, urban design, and the remaking of New York City’s High Line Park. *Environment and Planning A* 47(11): 2324–2338.
- Moss, M.R., Nickling, W.G. (1980). Landscape evaluation in environmental assessment and land use planning. *Environmental Management*, 4(1): 57–72.
- Ombler, K. (2018). Privacy – Getting it right. *Public Sector*, 41(2): 22–23.

- Pang, B., Lee, L. (2008). Opinion mining and sentiment analysis. *Foundations and Trends in Information Retrieval*, 2 (1–2): 1–135.
- Paul, M.J., Dredze, M. (2011). You are what you Tweet: Analyzing Twitter for public health. *The International AAAI Conference on Web and Social Media*, 20: 265–272.
- Pauwels, L. (2010). Visual sociology reframed: An analytical synthesis and discussion of visual methods in social and cultural research. *Sociological Methods and Research*, 38(4): 545–581.
- Pearce, K.E. (2013). Phoning it in: Theory in mobile media and communication in developing countries. *Mobile Media & Communication*, 1(1): 76–82.
- Polyák, L. (2017). A bundle of rights and obligations: Privately Owned Public Spaces. *Cooperative City*. Online: [www.cooperativecity.org/2017/11/01/privately-owned-public-spaces/print/](http://www.cooperativecity.org/2017/11/01/privately-owned-public-spaces/print/) (accessed: 2.11.2019).
- Roberts, H., Sadler, J., Chapman, L. (2018). The value of Twitter data for determining the emotional responses of people to urban green spaces: A case study and critical evaluation. *Urban Studies*, 56(4): 818–835.
- Schwartz, R., Hochman, N. (2014). The Social Media Life of Public Spaces: Reading Places Through the Lens of Geo-Tagged Data. In: *Locative Media*. R. Wilken, G. Goggin (Eds.). New York: Routledge.
- Statistics Poland (2019). *Household budget survey in 2018*. Warsaw: Statistics Poland, Social Surveys Department.
- Sztompka, P. (2015). Visual sociology. In: *International Encyclopedia of the Social & Behavioral Sciences*. J. Wright (Ed.). Amsterdam: Elsevier: 191–196.
- Vanolo, A. (2014). Smartmentality: The Smart City as Disciplinary Strategy. *Urban Studies*, 51(5): 883–898.
- Vasudevan, A. (2017). *The Autonomous City: A History of Urban Squatting*. London: Verso.
- Whyte, W.H. (2001). *The Social Life of Small Urban Spaces*. New York: Project for Public Spaces.
- Zappavigna, M. (2016). Social media photography: construing subjectivity in Instagram images. *Visual Communication*, 15(3): 271–292.